



Andrenidae (Hymenoptera, Apoidea) of Korea

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Abstract A total of 50 species under two genera in the family Andrenidae are listed from Korea based on the examination of specimens in several depositories and literatural review. *Andrena kyusani* Kim & Kim, 1989 is found to be a junior synonym of *A. longitibialis* Hirashima, 1961.

Key words checklist, new synonym, Korean fauna

INTRODUCTION

The family Andrenidae consists of three subfamilies Andreninae, Panurginae, and Oxaeinae (Michener, 2000). Some members of the first two subfamilies occur in the Korean Peninsula. Among them, Andreninae is the biggest, and most members of the subfamily belong to the genus *Andrena*. At present, about 1,200 species of *Andrena* are known to occur in the world, and most of them have been allocated to approximately 95 subgenera.

The first record of the andrenid bees in Korea was *Andrena thoracica* Fabricius by Radszkowski (1890). Yasumatsu (1941) reported 75 species and subspecies and made a check list of the genus *Andrena* from China, Japan, Korea, Mongolia, and the Far East of Russia. Later, some other Korean andrenid bees were added to the list by Hirashima (1952a, b, 1957b), Kim (1970, 1980), Kim and Kim (1983a, b, 1989a), Kim *et al.* (1990), Tadauchi & Lee (1992), and Tadauchi *et al.* (1997).

For a review of the listed species, we examined the collections of Seoul National University, National Institute of Agricultural Science and Technology of the Rural Development Administration, Suncheon National University, and Jejudo Folklore and Natural History Museum, preserved specimens identified by Dr. Tadauchi, and Korea University, preserved specimens by Kim (1970, 1980), Kim and Kim (1983a, b, 1989a) and Kim *et al.* (1990). Through this study, *Andrena kyusani* Kim and Kim is found to be a junior synonym of *Andrena longitibialis* Hirashima, and *Andrena prostomias* Perez is a misidentification of *A. dentata* Smith.

Some additions and corrections are made in the present checklist of Andrenidae since the previous publication in 1994 (Check List of Insects from Korea by ESK & KSAE). This checklist is mainly based on the examination of specimens in several depositories and contains the previous records except for the confirmed misidentification of the obvious records. Information from published and unpublished literatures were also consulted. The first description articles and mainly Korean records of the listed species were given in the synonymy list.

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As a result, a total of 50 species under two genera of Andrenidae are listed from Korea.

Superfamily Apoidea 꿀벌上科

Family Andrenidae 애꽃벌科

Subfamily Andreninae 애꽃벌亞科

Genus *Andrena* Fabricius, 1775 애꽃벌屬

Andrena Fabricius, 1775, Syst. Ent., p. 376. Type-species: *Apis helvola* Linnaeus, 1758, by designation of Viereck, 1912, Proc. U. S. Nat. Mus. 37: 613.

Anthrena Illiger, 1801, Mag. Insect. 1: 127. unjustified emendation of *Andrena* Fabricius, 1775.

Anthocharessa Gistel, 1850, Isis (Encyl. Ztschr.), 6: 82. Type-species: *Apis helvola* Linnaeus, 1758. unjustified replacement for *Andrena* Fabricius, 1775.

Subgenus *Andrena* (s. str.)

***Andrena* (*Andrena*) *benefica* Hirashima, 1962 작은애벌꽃**

Andrena (*Andrena*) *benefica* Hirashima, 1962, J. Fac. Agr., Kyushu Univ., 12(2): 151 (Japan); Tadauchi *et al.*, 1987: 45–46 (Korea); Tadauchi *et al.*, 1997: 188–9 (Korea: Jejudo).

Andrena (*Andrena*) *binifica* [sic] : Kim & Kim, 1983: 5 (first Korean record); ESK & KSAE, 1994: 266 (Korea).

Andrena (*Andrena*) *benifica* [sic] : Kim, 1996: 209 (Korea).

Distribution. Korea (incl. Jejudo), Japan, China, and Russian Far East.

***Andrena* (*Andrena*) *brevihirtiscopa* Hirashima, 1962 작은솔애꽃벌**

Andrena (*Andrena*) *brevihirtiscopa* Hirashima, 1962. J. Fac. Agr., Kyushu Univ., 12: 124 (Japan); Kim & Kim, 1983b: 71 (first Korean record); Tadauchi & Lee, 1992: 48 (Korea); Kim, 1996: 209 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (incl. Jejudo), Japan, China, and Russian Far East.

***Andrena* (*Andrena*) *dolharubang* Tadauchi et Xu, 1997 제주애꽃벌 (신칭)**

Andrena (*Andrena*) *dolharubang* Tadauchi et Xu, 1997, in Tadauchi *et al.*, Esakia, 37: 189–190 (Jejudo).

Distribution. Korea (Jejudo).

Notes. This species was described with a female from Jejudo, Korea by Tadauchi *et al.* (1997), but we have not been able to collect it yet.

***Andrena* (*Andrena*) *hondoica* Hirashima, 1962 혼도애꽃벌**

Andrena (*Andrena*) *hondoica* Hirashima, 1962. J. Fac. Agr., Kyushu Univ., 12: 144 (Japan); ESK & KSAE, 1994: 266 (first Korean record); Kim, 1996: 209 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea and Japan.

Notes. This species was first recorded from Korea only in the list by ESK & KSAE (1994).

***Andrena* (*Andrena*) *ishiharai* Hirashima, 1953 이시하라애꽃벌**

Andrena (*Andrena*) *ishiharai* Hirashima, 1953. Trans. Shikoku Ent. Soc., 3: 33 (Japan); Kim & Kim, 1983b: 70 (first Korean record); Tadauchi & Lee, 1992: 48 (Jejudo); ESK & KSAE, 1994: 266 (Korea); Kim, 1996:

210 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (incl. Jejudo), Japan, and Russian Far East.

***Andrena (Andrena) longitibialis* Hirashima, 1962** 긴다리애꽃벌 (규산애꽃벌)

Andrena (Andrena) longitibialis Hirashima, 1962. J. Fac. Agr., Kyushu Univ., 12: 139 (Japan); Tadauchi & Lee, 1992: 49 (Korea); Kim, 1996: 210 (Korea); Tadauchi *et al.*, 1997: 200 (in list).

Andrena (Andrena) kyusani Kim & Kim, 1989a, Korean J. Ent., 19(3): 200 (first Korean record); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 210 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list) (Syn. nov.).

Distribution. Korea (Central, South) and Japan.

Notes. This species was first recorded from Korea by Kim & Kim (1989a) as *A. kyusani*. The type specimens of *Andrena kyusani* deposited in Korea University were compared with specimens of *A. longitibialis*. We recognized that the former is a new synonym of the later.

***Andrena (Andrena) mikado* Strand et Yasumatsu, 1938** 미카도애꽃벌

Andrena (Melandrena) mikado Strand et Yasumatsu, 1938. Mushi, 11: 67 (Japan); Kim, 1970: 824 (first Korean record).

Andrena mikado: Kim, 1970: 660 (first Korean record).

Andrena (Andrena) mikado: Tadauchi & Lee, 1992: 48 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 210 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (incl. Jejudo) and Japan.

***Andrena (Andrena) sakagamii* Tadauchi, Hirashima & Matsumura, 1987** 사카가미애꽃벌

Andrena (Andrena) sakagamii Tadauchi, Hirashima & Matsumura, 1987, J. Fac. Agr., Kyushu Univ., 31: 29. Tadauchi & Lee, 1992: 48 (first Korean record); Kim, 1996: 210 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea, Japan, and Russian Far East.

Subgenus *Calomelissa* Hirashima et LaBerge, 1963

Calomelissa Hirashima et LaBerge, 1963, J. Fac. Agr., Kyushu Univ., 12: 241. Type-species: *Andrena prostomias* Perez, 1905, by original designation.

***Andrena (Calomelissa) tsukubana* Hirashima, 1957** 박하애꽃벌

Andrena tsukubana Hirashima, 1957, Mushi, 30(9): 55 (Japan).

Andrena (Calomelissa) tsukubana: Kim & Kim, 1983a: 6 (first Korean record); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 210 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South) and Japan.

Subgenus *Chlorandrena* Perez, 1890

Chlorandrena Perez, 1890, Actes de la Societe Lenneenne de Bordeaux 44: 172. Type-species: *Andrena humilis* Imhoff, 1832 by subsequent designation of Hedicke, 1933: 211.

***Andrena (Chlorandrena) knuthi* Alfken, 1900** 크누드애꽃벌

Andrena knuthi Alfken, 1900, Ent. Nachr., 26: 178 (Japan); Kim, 1970: 661, 825 (Korea).

Andrena (Chrysandrena) knuthi: Hirashima, 1952: 41 (first Korean record); Kim, 1996: 211 (Korea).

Andrena (Chlorandrena) kunthi: ESK & KSAE, 1994: 266 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central), Japan, and China.

Notes. The records of this species from Korea were likely to be suspected as ones of *A. okinawana*.

***Andrena (Chlorandrena) knuthiformis* Hirashima, 1952** 크누드형애꽃벌 (신칭)

Andrena (Chrysandrena) knuthiformis Hirashima, 1952, Mushi, 23(5): 43 (China, Korea); Kim, 1996: 211 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central), and Northern China.

***Andrena (Chlorandrena) okinawana* Matsumura et Uchida, 1926** 남방애꽃벌 (신칭)

Andrena okianawana Matsumura et Uchida, 1926, Ins. Mats., 1: 69 (Japan);

Andrena (Chlorandrena) knuthi okinawana: Hirashima, 1963b: 262.

Andrena (Chlorandrena) okinawana: Tadauchi & Lee, 1992: 54 (first Korean record); Kim, 1996: 210 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South, Jejudo), Japan, and China.

***Andrena (Chlorandrena) taraxaci orienticola* Strand, 1915** 동양애꽃벌 (신칭)

Andrena humilis var. *orienticola* Strand, 1915, Ent. Mitt., 4: 72 (China).

Andrena (Chlorandrena) taraxaci chikuzenensis Hirashima, 1957, Mushi, 30: 52 (Japan); Tadauchi *et al.*, 1997: 198 (first Korean record, Jejudo). [Syn. by Xu & Tadauchi, 1998]

Andrena (Chlorandrena) taraxaci orienticola : Warncke, 1967, Eos, 43: 204, 295; Xu & Tadauchi, 1998: 97 (Korea).

Distribution. Korea (incl. Jejudo), Japan, and China.

Subgenus *Cnemidandrena* Hedicke, 1933

Cnemidandrena Hedicke, 1933, Mitt. zool. Mus. Berlin, 19: 213. Type-species: *Mellita nigriceps* Kirby, 1802, by original designation.

***Andrena (Cnemidandrena) denticulata seneciorum* Hirashima, 1964** 히라시마애꽃벌

Andrena (Cnemidandrena) seneciorum Hirashima, 1964, J. Fac. Agr., Kyushu Univ. 13(1): 40–43 (Japan); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 211 (Korea).

Andrena seneciorum : Kim, 1970: 661–662, 825 (first Korean record).

Andrena (Cnemidandrena) denticulata seneciorum: Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South), Japan, China, and Russian Far East.

Subgenus *Euandrena* Hedicke, 1933

Euandrena Hedicke, 1933, Mitt. zool. Mus. Berlin, 19: 212–213. Type-species: *Andrena bicolor* Fabricius, 1775, by original designation.

***Andrena (Euandrena) plumosa* Kim et Kim, 1989** 털애꽃벌

Andrena (Euandrena) plumosa Kim & Kim, 1989a, Korean J. Ent., 19(3): 200–201 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 211 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South).

***Andrena (Euandrena) ruficrus rabicrus* Hirashima, 1957** 붉은다리애꽃벌 (개칭)

Andrena (Euandrena) ruficrus rabicrus Hirashima, 1957, Mushi, 30: 50 (Japan); Tadauchi & Lee, 1992: 50

(first Korean record); Kim, 1996: 211 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (incl., Jejudo), Japan, and China.

***Andrena (Euandrena) luridiloma* Strand, 1915** 작은털애꽃벌 (신청)

Andrena luridiloma Strand, 1915, Et. Mitt., 4: 72–73 (China).

Ansrena (Euandrena) stellaria Hirashima, 1964, J. Fac. Agr., Kyushu Univ., 13: 49 (Japan); Tadauchi & Lee, 1992: 49 (first Korean record); Kim, 1996: 211 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central), Japan, and China.

Subgenus *Holandrena* Perez, 1890

Holandrena Perez, 1890, Actes de la Societe Lenneenne de Bordeaux 44: 176. Type-species: *Melitta labialis* Kirby, 1802, by subsequent designation of Hedicke, 1933: 214.

***Andrena (Holandrena) mediocalens* Cockerell, 1931** 콕케렐애꽃벌

Andrena mediocalens Cockerell, 1931, Amer. Mus. Novitate: 11.

Andrena (Gymnandrena) mediocalens : Kim & Kim, 1983a: 6 (first Korean record); Kim *et al.*, 1990: 3–4 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 212 (Korea).

Andrena (Holandrena) mediocalens: Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central), and China.

***Andrena (Holandrena) valeriana* Hirashima, 1957** 발레리아애꽃벌

Andrena (Holandrena) valeriana Hirashima, 1957, Mushi, 30(9): 56 (Japan); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 212 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Andrena valeriana: Kim, 1970: 662, 825 (first Korean record).

Distribution. Korea (Central), Japan, China, and Russian Far East.

Note. This species was first recorded from Korean peninsula by Kim (1970), however, first author could not find any specimen of *A. valeriana* in Korea university except for the misidentified specimens as this.

Subgenus *Hoplandrena* Perez, 1890

Hoplandrena Perez, 1890, Actes de la Societe Lenneenne de Bordeaux 44: 170. Type-species: *Melitta trimmerana* Kirby, 1802, by subsequent designation of Hedicke, 1933: 214.

***Andrena (Hoplandrena) dentata* Smith, 1879** 가시애꽃벌

Andrena dentata Smith, 1879, Descr. New Spec. Hym., 51 (Japan); Kim, 1970: 659, 824 (first Korean record).

Andrena (Hoplandrena) dentata : Tadauchi & Lee, 1992: 49 (Jejudo); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 212 (Korea); Tadauchi *et al.*, 1997: 190 (Korea: Jejudo).

Distribution. Korea (incl. Jejudo), Japan, China, and Russian Far East.

Notes. This species was first recorded from Korean peninsula by Kim (1970). This is a common species in Korea, and most of the specimens identified as *A. pruniphora* in Korea were *A. dentata*.

***Andrena (Hoplandrena) miyamotoi* Hirashima, 1964** 미야모도애꽃벌

Andrena (Hoplandrena) miyamotoi Hirashima, 1964, J. Fac. Agr., Kyushu Univ., 13: 87 (Japan); Kim & Kim, 1983b: 71 (first Korean record); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 212 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central), Japan, and Russian Far East.

***Andrena (Hoplodrena) nudigastroides* Yasumatsu, 1935** 사과애꽃벌

Andrena (Chlorandrena) nudigastra nudigastroides Yasumatsu, 1935, Insects Jehol (3) 7: 40 (China).

Andrena pruniphora Hirashima, 1964, J. Fac. Agr., Kyushu Univ., 13: 93; Kim, 1970: 661, 825 (first Korean record).

Andrena (Hoplodrena) pruniphora: ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 212 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central), Japan, and China.

Notes. This species is rare in Korea. According to re-examination of specimens identified as *A. pruniphora* in Korea University, most of them were *A. dentata*. Previous records by Kim (1970) and Kim (1996) were likely to be misidentification of *A. dentata*.

***Andrena (Hoplodrena) rosae alfkeni* Friese, 1914** 애꽃벌

Andrena alfkeni Friese, 1914, Stett. ent. Ztg., 75: 228 (Siberia).

Andrena florea sachalinensis Yasumatsu, 1939, Ins. Mats., 13(2/3): 66–8 (Saghalien); Kim, 1970: 658, 824 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 215 (Korea).

Andrena (Hoplodrena) rosae alfkeni: Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (North, Central), Japan, China, and Russian Far East.

Notes. This species was first recorded from Korean peninsula by Kim (1970), however, no specimens were found in Korea University. Authors examined a male specimen collected in Mt. Odaesan.

Subgenus *Lepidandrena* Hedicke, 1933

Lepidandrena Hedicke, 1933, Mitt. zool. Mus. Berlin, 19: 215. Type-species: *Andrena curvungula* Thomson, 1870, by original designation.

***Andrena (Lepidandrena) chengtehensis* Yasumatsu, 1935** 만주애꽃벌 (신칭)

Andrena (Poecilandrena) chengtehensis Yasumatsu, 1935, Insects Jehol, 8: 38 (Manchuria).

Andrena (Lepidandrena) lebedevi Popov, 1940. Trav. Inst. Zool. Acad. Sci. URSS, 6: (China) (Syn. by Tadauchi *et al.*, 1997)

Andrena (Lepidandrena) chengtehensis: Tadauchi *et al.*, 1997: 198 (first Korean record).

Distribution. Korea (Central, Jejudo), and China.

Note. According to examination of a female, we added this species into fauna of Jejudo in this study.

Subgenus *Leucandrena* Hedicke, 1933

Leucandrena Hedicke, 1933, Mitt. zool. Mus. Berlin, 19: 215. Type-species: *Melitta barbilabris* Kirby, 1802 (= *Apis sericea* Christ, 1791, *nec* Förster, 1771), by original designation.

***Andrena (Leucandrena) delicatula* Cockerell, 1818** 긴솔애꽃벌 (코마애꽃벌) (개칭)

Andrena delicatula Cockerell, 1918, Ann. Mag. nat. Hist., (9), 2: 481 (China).

Andrena (Simandrena) koma Hirashima, 1952, Mushi, 24: 32–33 (Korea); Kim, 1970: 824 (Korea); Tadauchi & Lee, 1992: 51 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 214 (Korea). (Syn. by Xu & Tadauchi, 1997).

Andrena (Leucandrena) delicatula: Xu & Tadauchi, 1997: 180–181 (Korea); Tadauchi *et al.*, 1997: 191 (Jejudo).

Distribution. Korea (incl. Jejudo), and China.

Subgenus *Melandrena*, Perez, 1890

Melandrena, Perez, 1890, Actes de la Societe Lennenne de Bordeaux 44: 170. Type-species: *Apis thoracica* Fabricius, 1775, by subsequent designation of Michener, 1997: 36.

Gymnandrena Hedicke, 1933, Mitt. zool. Mus. Berlin 19: 212. Type-species: *Apis thoracica* Fabricius, 1775 by original designation.

***Andrena (Melandrena) crassepunctata* Cockerell, 1931** 살짝곰보애꽃벌

Andrena crassepunctata Cockerell, 1931, Amer. Mus. Nov., 446: 10 (China); Kim, 1970: 659 (first Korean Record).

Andrena (Gymnandrena) crassepunctata: Hirashima, 1957: 63 (first Korean record).

Andrena (Gymnandrena) crasspunctata [sic]: Kim et al., 1990: 2 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 211 (Korea).

Andrena (Melandrena) crassepunctata: Tadauchi et al., 1997: 200 (Korea, in list).

Distribution. Korea (Central), and China (Manchuria).

***Andrena (Melandrena) koreana* Hirashima, 1952** 고려애꽃벌

Andrena (Gymnandrena) koreana Hirashima, 1952, Mushi, 24: 29 (Korea); Hirashima, 1957: 64 (Korea); Kim, 1970: 659, 824 (Korea); Kim et al., 1990: 3 (Korea, Jejudo); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 211 (Korea).

Andrena (Melandrena) koreana: Tadauchi et al., 1997: 192 (Jejudo).

Distribution. Korea (incl. Jejudo), and China.

***Andrena (Melandrena) parathoracica* Hirashima, 1957** 홍가슴애꽃벌

Andrena (Gymnandrena) parathoracica Hirashima, 1957, Mushi, 30(10): 63 (Japan); Kim et al., 1990: 4 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 211 (Korea).

Andrena parathoracica: Kim, 1970: 660, 824 (first Korean record).

Andrena (Melandrena) parathoracica: Tadauchi et al., 1997: 200 (Korea, in list).

Distribution. Korea (North?, Central, South), Japan, and Russian Far East.

***Andrena (Melandrena) sasakii* Cockerell, 1913** 사사키애꽃벌

Andrena sasakii Cockerell, 1913, Ann. Mag. nat. Hist. (8), 11: 189 (Japan).

Andrena (Gymnandrena) sasakii: Kim et al., 1990: 4 (first Korean record); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 212 (Korea).

Andrena (Melandrena) sasakii: Tadauchi et al., 1997: 200 (Korea, in list).

Distribution. Korea (Central), Japan, and China.

***Andrena (Melandrena) thoracica sinensis* Cockerell, 1910** 중국애꽃벌

Andrena sinensis Cockerell, 1910, Trans. Amer. ent. Soc., 36: 249 (China).

Andrena thoracica: Radoszkowski, 1890: 230 (first Korean record) (nec Fabricius).

Andrena thoracica sinensis: Yasumatsu, 1941: 281 (Korea); Kim, 1970: 658, 824 (Korea).

Andrena (Gymnandrena) thoracica sinensis: Hedicke, 1939: 337; Yasumatsu, 1946, : 20 (Korea); Hirashima, 1957: 62 (Korea); Kim et al., 1990: 4-5 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 212 (Korea).

Andrena (Melandrena) thoracica sinensis: Tadauchi et al., 1997: 200 (Korea, in list).

Distribution. Korea (North, Central), and Northern China.

Note. This species was described from Korean peninsula by Radoszkowski (1890) as *A. thoracica*.

Subgenus *Micrandrena* Ashmead, 1899

Micrandrena Ashmead, 1899, Trans. Amer. ent. Soc., 26: 89. Type-species: *Micrandrena pacifica* Ashmead, 1899 (= *Andrena melanochroa* Cockerell, 1889), by original designation.

***Andrena (Micrandrena) brassicae* Hirashima, 1957 유채애꽃벌 (신칭)**

Andrena (Micrandrena) brassicae Hirashima, 1957, Mushi, 30: 52 (Japan); Tadauchi & Lee, 1992: 53 (first Korean record); Kim, 1996: 213 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South), Japan, and China.

***Andrena (Micrandrena) chirisana* Tadauchi, 1992 지리애꽃벌 (신칭)**

Andrena (Micrandrena) chirisana Tadauchi, 1992, in Tadauchi & Lee, Esakia, 32: 53 (Mt. Jirisan, Korea).

Distribution. Korea (South).

Notes. This species was described from Mt. Jirisan, southern part of Korean peninsula by Tadauchi & Lee (1992), but we have not able to collect them yet.

***Andrena (Micrandrena) hikosana* Hirashima, 1957 히코산애꽃벌**

Andrena (Micrandrena) hikosana Hirashima, 1957. Mushi, 30: 53 (Japan); Kim & Kim, 1983a: 7 (first Korean record); Tadauchi & Lee, 1992: 52 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 213 (Korea); Tadauchi *et al.*, 1997: 194 (Jejudo).

Distribution. Korea (incl. Jejudo), Japan, China, Russian Far East.

***Andrena (Micrandrena) kaguya* Hirashima, 1965 꼬마애꽃벌**

Andrena (Micrandrena) kaguya Hirashima, 1965, J. Fac. Agr., Kyushu Univ., 13: 467 (Japan); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 213 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Andrena (Micrandrena) brassicae : Kim & Kim, 1983a: 7 (first Korean record). (nec Hirashima)

Distribution. Korea (Central), Japan, and China.

Notes. This species was first recorded from Korean peninsula as *A. brassicae* by Kim & Kim (1983a), however, Kim (1996) recognized it as misidentification of *A. kaguya* in her doctor thesis, 1985.

***Andrena (Micrandrena) komachi* Hirashima, 1965 탐라애꽃벌 (신칭)**

Andrena (Micrandrena) komachi Hirashima, 1965, J. Fac. Agr., Kyushu Univ., 13: 469 (Japan); Tadauchi *et al.*, 1997: 194-195 (first Korean record, Jejudo).

Distribution. Korea (Incl. Jejudo), Japan, and China.

***Andrena (Micrandrena) munakatai* Tadauchi, 1985 산오름애꽃벌 (신칭)**

Andrena (Micrandrena) munakatai Tadauchi, 1985. J. Fac. Agr., Kyushu Univ., 30: 70; Tadauchi & Lee, 1992: 53 (first Korean record); Kim, 1996: 213 (Korea); Tadauchi *et al.*, 1997: 195 (Jejudo).

Distribution. Korea (incl. Jejudo), Japan, and China.

***Andrena (Micrandrena) sublevigata* Hirashima, 1966 해오름애꽃벌 (신칭)**

Andrena (Micrandrena) sublevigata Hirashima, 1966. J. Fac. Agr., Kyushu Univ., 14: 91, 95 (Japan); Tadauchi & Lee, 1992: 52 (first Korean record); Kim, 1996: 213 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South), Japan, and China.

Subgenus *Oreomelissa* Hirashima et Tadauchi, 1975

Oreomelissa Hirashima et Tadauchi, 1975, J. Fac. Agr., Kyushu Univ., 19: 175–177. Type-species: *Andrena mitakensis* Hirashima, 1963, by original designation.

***Andrena (Oreomelissa) amurensis* Friese, 1922 금강애꽃벌 (新稱)**

Andrena amurensis Friese, 1922, Konowia, 1: 212 (Amur).

Andrena (Oreomelissa) mitakensis Hirashima & Tadauchi, 1975, J. Fac. Agr., Kyushu Univ., 19: 178 (in part, first Korean record).

Andrena (Oreomelissa) amurensis: Tadauchi *et al.*, 1997: 199–200 (N. Korea, Mt. Geumgansan).

Distribution. Korea (North, Central), China, and Russian Far East.

Notes. This species was first recorded from Korean peninsula by Hirashima & Tadauchi (1975) as *A. mitakensis* Hirashima, however, corrected by Tadauchi *et al.* (1997).

***Andrena (Oreomelissa) kamikochiana* Hirashima, 1963 산마루애꽃벌 (신칭)**

Andrena (Calomelissa) kamikochiana Hirashima, 1963, J. Fac. Agr., Kyushu Univ., 12: 251 (Japan).

Andrena (Oreomelissa) kamikochiana: Tadauchi *et al.*, 1997: 201 (first Korean record).

Distribution. Korea (North), Japan, and China.

Subgenus *Plastandrena* Hedicke, 1933

Plastandrena Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 217–218. Type-species: *Melitta tibialis* Kirby, 1802, by original designation.

***Andrena (Plastandrena) magnipunctata* Kim et Kim, 1989 큰점애꽃벌**

Andrena (Plastandrena) magnipunctata Kim et Kim, 1989, Korean J. Ent., 19: 201 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 214 (Korea); Tadauchi *et al.*, 1997: 195–196 (Jejudo).

Distribution. Korea (incl. Jejudo), and China.

Notes. This species was described from Mt. Deokyusan, Korea by Kim & Kim (1989). The record from Jejudo by Tadauchi *et al.* (1997) was likely to be misidentification with other species, according to description and figures, however, we could not examined the specimen used for description.

***Andrena (Plastandrena) transbaicalica* Popov, 1949 기마애꽃벌 (신칭)**

Andrena (Plastandrena) transbaicalica Popov, 1949, Ent. Rev. USSR., 30: 398 (Siberia); Tadauchi *et al.*, 1997: 200 (in list) (Korea).

Andrena (Plastandrena) astragalina Hirashima, 1957. Mushi, 30: 51 (Japan); Tadauchi & Lee, 1992: 56 (first Korean record).

Distribution. Korea (Central, South), Japan, China, and Russia (Siberia, Far East).

Subgenus *Poecilandrena* Hedicke, 1933

Subgenus *Poecilandrena* Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 218. Type-species: *Andrena labiata* Fabricius, 1781, by original designation.

***Andrena (Poecilandrena) fukuokensis* Hirashima, 1952 구주애꽃벌**

Andrena (Micrandrena) fukuokensis Hirashima, 1952. Mushi, 23: 39 (Japan).

Andrena (Poecilandrena) fukuokensis : Kim & Kim, 1983a: 6 (first Korean record); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 214 (Korea); Tadauchi *et al.*, 1997: 196–197 (Jejudo).

Distribution. Korea (incl. Jejudo), Japan, China, and Russian Far East.

Subgenus *Rhaphadrena* LaBerge, 1871

Rhaphadrena LaBerge, 1971, Trans. Amer. ent. Soc., 97: 507. Type-species: *Andrena prima* Casad et Cockerell, 1896, by original designation.

***Andrena (Rhaphadrena) richardsi* Hirashima, 1965 리챠드애꽃벌**

Andrena richardsi Hirashima, 1965. J. Fac. Agr., Kyushu Univ., 13: 482 (Japan); Kim, 1970: 825 (first Korean record).

Andrena (Leucandrena) richardsi: Tadauchi & Lee, 1992: 54 (Korea).

Andrena (Notandrena) richardsi: ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 213 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South), and Japan.

Subgenus *Simandrena* Pérez, 1890

Simandrena Pérez, 1890, Actes Soc. Linn. Bordeaux, 44: 174. Type-species: *Andrena propinqua* Schenck, 1853 (= *Melitta dorsata* Kirby, 1802), by subsequent designation of Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 218.

***Andrena (Simandrena) kerriae* Hirashima, 1952 꼬마허리애꽃벌 (신칭)**

Andrena (Simandrena) kerriae Hirashima, 1965, J. Fac. Agr., Kyushu Univ., 13: 499 (Japan); Tadauchi & Lee, 1992: 51 (first Korean record); Tadauchi & Xu, 1995: 217 (Korea); Kim, 1996: 215 (Korea); Tadauchi *et al.*, 1997: 197 (Jejudo).

Distribution. Korea (South, Jejudo), Japan, China, and Russian Far East.

***Andrena (Simandrena) opacifovea* Hirashima, 1952 허리애꽃벌 (신칭)**

Andrena (Simandrena) opacifovea Hirashima, 1952, Mushi, 24: 31 (Japan).

Andrena (Simandrena) opacifovea opacifovea: Tadauchi & Lee, 1992: 51 (first Korean record); Kim, 1996: 214 (Korea).

Distribution. Korea (Central), and Japan.

Note. This species was first recorded from Korean peninsula by Tadauchi & Lee (1992), but Tadauchi *et al.* (1997) omitted it in Korean andrenid list.

***Andrena (Simandrena) yamato* Tadauchi et Hirashima, 1983 등근허리애꽃벌**

Andrena (Simandrena) yamato Tadauchi et Hirashima, 1983, Esakia, 20: 83 (Japan); Tadauchi & Lee, 1992: 50 (Korea); Tadauchi & Xu, 1995: 210 (Korea); Kim, 1996: 214 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Andrena (Simandrena) opacifovea koreana Kim & Kim, 1989, Korean J. Ent., 19: 202 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 214 (Korea).

Distribution. Korea (incl. Jejudo), Japan, China, and Russian Far East.

Notes. This species was described from South Korea by Kim & Kim (1989) as *A. opacifovea koreana*, and later this subspecies treated it as a junior synonym of this species by Tadauchi &

Lee (1992).

Subgenus *Stenomelissa* Hirashima et LaBerge, 1965

Stenomelissa Hirashima et LaBerge, 1965, J. Fac. Agr., Kyushu Univ., 13: 500. Type-species: *Andrena halictoides* Smith, 1869, by original designation.

***Andrena (Stenomelissa) halictoides* Smith, 1869** 긴얼굴애꽃벌

Andrena halictoides Smith, 1869, Entomologist, 4: 205 (Japan).

Andrena (Stenomelissa) halictoides : Kim & Kim, 1983a: 6 (first Korean record); Tadauchi & Lee, 1992: 55 (Korea); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 215 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (Central, South), Japan, China, and Russian Far East.

Subgenus *Taeniandrena* Hedicke, 1933

Taeniandrena Hedicke, 1933, Mitt. Zool. Mus. Berlin, 19: 219. Type-species: *Melitta ovatula* Kirby, 1802, by original designation.

***Andrena (Taeniandrena) ezoensis* Hirashima, 1965** 애조애꽃벌

Andrena (Taeniandrena) ezoensis Hirashima, 1965, J. Fac. Agr., Kyushu Univ., 13: 506 (Japan); Kim & Kim, 1983b: 71–72 (first Korean record); Tadauchi & Lee, 1992: 54 (Korea: Jejudo); ESK & KSAE, 1994: 266 (Korea); Kim, 1996: 215 (Korea); Tadauchi *et al.*, 1997: 200 (Korea, in list).

Distribution. Korea (incl. Jejudo), Japan, China, and Russian Far East.

Subgenus *Trachandrena* Robertson, 1902

Trachandrena Robertson, 1902, Trans. Amer. ent. Soc., 28: 187–189. Type-species: *Andrena rugosa* Robertson, 1891, by original designation.

***Andrena (Trachandrena) haemorrhoa japonibia* Hirashima, 1957** 주름허리애꽃벌

Andrena (Trachandrena) haemorrhoa japonibia Hirashima, 1957, Mushi, 30: 53 (Japan); Kim & Kim, 1983b: 72 (first Korean record); Tadauchi & Lee, 1992: 56 (Korea); Kim, 1996: 215 (Korea); Tadauchi *et al.*, 1997: 197–198 (Korea).

Andrena (Taeniandrena) haemorrhoa japonibia: ESK & KSAE, 1994: 266 (Korea).

Andrena (Trachandrena) foveopunctata: Kim & Kim, 1983a: 7; Tadauchi *et al.*, 1997: 200 (Korea, in list). (nec Alfken, misidentification).

Distribution. Korea (incl. Jejudo), Japan, China, and Russian Far East.

Subfamily Panurginae 애꽃벌붙이亞科

Tribe Panurgini 애꽃벌붙이族

Genus *Panurginus* Nylander, 1848 애꽃벌붙이屬

Panurginus Nylander, 1848, Notiser ur Sällskapets pro Fauna et Flora Fennica Forhandlingar 1: 223. Type-species: *Panurginus niger* Nylander, 1848, monobasic.

***Panurginus crawfordi* Cockerell, 1914** 애꽃벌붙이 (북지애꽃벌)

Panurginus crawfordi Cockerell, 1914, Ann. Mag. Nat. Hist., (8), 13: 279 (Japan); Kim, 1970: 672, 825 (first Korean record); Tadauchi & Lee, 1992: 56 (Korea); ESK & KSAE, 1994: 266 (Korea).

Distribution. Korea (incl. Jejudo), Japan, and Russian Far East.

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